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SYNOPTIC FLORA OF THE KOTA DIVISION (S. E. RAJASTHAN), PART III*

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CYPERACEAE

1. Glumes distichous on the rhachilla of the spikelet ... 2
   Glumes spiral ... 6
2. Nut bearing glume winged on the keel ... *Mariscus*
   Nut bearing glume with unwinged keel ... 3
3. Spikelets many flowered ; glumes many ; rhachilla persistent ... 4
   Spikelets 1-2-flowered ; glumes fewer ; rhachilla deciduous ... 5
4. Stigmas 3, occasionally 2 or 1 ; achene usually trigonous rarely dorsally compressed ... *Cyperus*
   Stigmas 2 ; nut laterally compressed ... *Pycreus*
5. Spikelets in globular sessile heads ; stigmas 2 ; nut laterally compressed *Kyllinga*
   Spikelets in cylindrical small spikes arranged in umbellate clusters ; stigmas 3 ; nut triquetrous ... *Mariscus*
6. Hypogynous bristles present, uniseriate, undivided ; inflorescence a single terminal spikelet ; style base swollen, persistent ; leaves none ... *Eleocharis*
   Hypogynous bristles present or absent ; plants usually leafy, if leafless without bristles ... 7
7. Style base swollen but falling with the style ; hypogynous bristles none; plants usually leafy, if rarely leafless with compound inflorescence ... *Fimbristylis*
   Style-base persistent as beak on the nut ; hypogynous bristles present or absent ; plants leafy ... 8
8. Hypogynous bristles linear, if absent stem terete with lateral heads of spikelets ... *Scirpus*
   Hypogynous bristles biseriate, outer linear, inner petaloid, obovate ; cluster of spikelets 1-3 approximate *Fuirena*

CYPERUS L.

1. Nut dorsally compressed ; spikelets umbellate ; stigmas 2 ... 2
   Nut triquetrous ; stigmas 3 ... 4
2. Spikelets in terminal heads ; stems reaching 25 cm in length ; bracts 2.5-15 cm long ; a dwarf annual herb ... *C. michelianus* ssp. *pygmaeus*
   Spikelets in apparently lateral heads or in umbellate spikes ... 3
3. Spikelets 1-30 in one apparently lateral head ; stems under 60 cm high ; bracts 2.5-7.5 cm long ... *C. laevigatus*
   Spikelets umbellate ; stems up to 90 cm long ; bracts up to 45 cm long ; a stout perennial herb ... *C. alopecuroides*
4. Rhachilla not winged ... 5
   Rhachilla distinctly winged ... 12
5. Inflorescences small head-like simple cluster, or clusters digitate or head with few umbellate clusters ... 6
   Inflorescences rather large open, made up of many umbellate clusters 9
6. Nut nearly as long as the obtuse glume ; stamens 1, rarely 2 ; annual herb ... *C. difformis*
   Nut one-half of the glume or shorter; glume mucronate ... 7
7. Nut one-third of the glume ; glume 5 mm long, many nerved ; head single ... *C. niveus*
   Nut longer ; glume 5 mm long or shorter, fewer nerved ; head umbellate ... 8
8. Spikelets 12 mm long or longer ; glume 5 mm long ; stamens 3 ... *C. compressus*
   Spikelets 5-8 mm long ; glume 3 mm long with mucro of its length ; stamen 1 ... *C. squarrosus*
9. Glumes obtuse 2 mm or shorter ... 10
   Glumes acute or mucronate, 3 mm long or longer ... 11
10. Glumes 1.25-1.5 mm long, 3-5-nerved ; rhachis glabrous ... *C. iria*
    Glume 1.75-2 mm long, 7-nerved ; rhachis hairy ... *C. alulatus*
11. Umbels compound ; spikelets on maturity spreading at right angle to the axis, greenish ; plant not stoloniferous ... *C. nutans* var. *eleusinoides*
    Umbels closely corymbed ; spikelets spreading at maturity, reddish or brown ; plants stoloniferous ... *C. procerus* var. *stenanthus*
12. Rhizomes stoloniferous ; umbels compound ... 13
    Rhizomes not stoloniferous, short ; umbels compound or decompound 14
13. Stem-base nodose, suddenly constricted into a wiry rhizome, stolon tuberiferous or terminated by bulbils, tubers not or hardly zonate ; spikelets 2 mm broad or less ... *C. rotundus*

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Stem at base erect, stolons lateral long, very slender bearing tubers, tubers distinctly zonate, woody; spikelets yellow or yellowish-brown *C. esculentus*

14. Glumes obtuse, loosely imbricate, obliquely spreading; spikelets 1.5-1.8 cm long, wings of the rhachilla deciduous; rhizome short woody, scales somewhat remote, oblong-elliptic rufous ... *C. pangorei*

Glumes mucronate or if obtuse spikelets only 10-12 mm long; wings of the rhachilla persistent ... 15

15. Spikelets 4-6 mm long; glumes mucronate, densely imbricate ... *C. exaltatus*

Spikelets 10-12 mm long, glumes obtuse, densely imbricate ... *C. longus*

C. michelianus (L.) Del. ssp. **pygmaeus** (Rottb.) Aschers et Graebn.; *Juncellus pygmaeus* C. B. Clarke; FBI 6: 596; FUGP 3: 341.

Widespread in Rajasthan. Fls. & frts.: March-June. Kota: Kalisind river *Verma* 3383; Eklera *Majumder* 10053.

C. laevigatus L.; *Juncellus laevigatus* C. B. Clarke; FBI 6: 596; FUGP 3: 341.

Widespread in Rajasthan. Fls. & frts.: July-Sept. Jhalawar *Majumder* 10125. (Phulera *Wadhwa* 8254; Jaipur *Wadhwa* 8385; Phalsund *Wadhwa* 4764).

C. alopecuroides Rottb.; *Juncellus alopecuroides* C. B. Clarke; FBI 6: 595; FUGP: 340.

In the region east of the Aravalli. Fls. & frts.: Aug.-Jan. Kota *Wadhwa* 9346.

C. difformis L.; FBI 6: 599; FUGP 3: 327.

Widespread in Rajasthan. Fls. & frts.: Oct.-Jan. Kota *Wadhwa* 9259; Jhalawar *Wadhwa* 3536; *Majumder* 13293; 10064; 10075; Eklera *Verma* 3442; Kota *Majumder* 12402.

C. niveus Retz.; FBI 6:601; FUGP 3: 327.

Widespread in Rajasthan. Fls.: July-Oct. Kota: Shahabad *Verma* 647.

C. compressus L.; FBI 6: 605; FUGP 3: 328.

Widespread in Rajasthan. Fls.: Almost round the year. Jhalawar: Bijliya Bhadak *Wadhwa* 7472; Jhalawar *Wadhwa* 5439A.

C. squarrosus L.; *C. aristatus* Rottb.; FBI 6: 606; FUGP 3: 328.

Widespread in Rajasthan. Fls. Aug.-Nov. Kota: Kishanganj *Verma* 733.

C. iria L.; FBI 6: 607; FUGP 3: 329.

Widespread in Rajasthan. Fls.: Aug.-Dec. Jhalawar *Wadhwa* 5439.

C. alulatus Kern

Widespread in Rajasthan (Ramgarh *Wadhwa* 5150; Mohangarh *Wadhwa* 5100; Pratapgarh *Majumder* 12241), Kota: Shahabad *Majumder* 10477.

C. nutans var. **eleusinoides** (Kunth) Haines; *C. eleusinoides* Kunth; FBI 6: 608; FUGP 3: 330.

Widespread in Rajasthan. Fls. & frts.: Aug.-Dec. Jhalawar *Wadhwa* 7693; Shahabad *Verma* 694; Eklera *Majumder* 10012; Kota *Verma* 446.

C. procerus Vahl Kunth var. **stenanthus** Kuekunth; *C. pilosus* C. B. Clarke; FBI 6: 609.

In the south-east Rajasthan. Fls. & frts.: Nov.-Dec. Jhalawar *Majumder* 10077.

C. rotundus L.; FBI 614; FUGP 3: 332.

Widespread in Rajasthan. Fls. & frts.: July-Oct. Kapildhara-Puraniya *Verma* 777; 750; 778; Shahabad *Verma* 443; Parshad *Verma* 127.

C. esculentus L.; FBI 6: 616.

In the south-eastern part-Gupta.

C. pangorei Rottb.; *C. tagetum* Roxb.; FBI 6: 613; FUGP 3: 334.

In the region east of the Aravalli, along streams or lakes. Fls. & frts.: Sept.-Febr. Jhalawar: Pirawa *Verma* 6834; Jhalawar *Majumder* 10071; Bakani, Kalisind *Verma* 7010; Eklera: Newaj river *Wadhwa* 7605; Kota *Majumder* 13186.

C. exaltatus Retz.; FBI 6: 627; FUGP 3: 331.

In the region east of the Aravalli including Mt. Abu. Fls. & frts.: Aug.-Nov. Kota: Chambal river *Majumder* 10121; Kishanganj *Verma* 730; Baran *Majumder* 13285.

C. longus L.; FBI 6: 614.

Kota-Cook et Gut; also in Mt. Abu.

MARISCUS Vahl nom. conserv.

M. paniceus (Rottb.) Vahl var. **roxburghianus** C. B. Clarke; FBI 6: 621; FUGP 3: 347. *Cyperus paniceus* (Rottb.) Boeck. var. *roxburghianus* (Clarke) Kuk.

In the region east of the Aravalli, including Mt. Abu. Fls. & frts.: Sept.-Nov. Kota: Shahabad *Verma* 651; Jhalawar *Wadhwa* & *Verma* 7474.

M. cyperoides (Roxb.) A. Dietr. *Courtoisia cyperoides* Nees; FBI 6: 625; FUGP 3: 344.

In south (Chittor *Verma* 1662) and in south-east Rajasthan. Fls.: Sept.-Febr. Kota: Shahabad *Majumder* 13223.

PYCREUS P. Beauv.

Glumes 1.5 mm long, distinctly mucronate; stamens 1.2 ...	1. *P. pumilus*
Glumes 1.5-2 mm long, obtuse; stamens always 2 ...	2. *P. globosus*

P. pumilus (L.) Nees; *P. nitens* (Retz.) Nees; FBI 6: 591; FUGP 3: 339.

Widespread in Rajasthan. Fls. & frts.: Aug.-Feb. Kota: Kishanganj *Verma* 709; Kota *Majumder* 10473.

P. globosus (All.) Reichb.; FUGP 3: 337; *P. capillaris* (Koen) Nees; FBI 6: 591.

In the south (Chittor *Majumder* 10155) and in the south-east Rajasthan. Fls. & frts.: Nov.-Dec. Monoharthana *Verma* 3464.

KYLLINGA Rottb.

Rhizomes short or none; older leaf-sheaths fibrous ...	*K. tenuifolia*
Rhizomes long, creeping; leaf-sheaths not fibrous ...	*K. brevifolia*

K. tenuifolia Steud.; *K. triceps* Rottb.; FBI 6: 587; FUGP 3: 343; *Cyperus triceps* (Rottb.) Endl.

In the region east of the Aravalli including Mt. Abu. Fls. & frts.: almost throughout the year. Kota *Wadhwa* 9467; Jhalawar *Verma* 3341.

K. brevifolia Rottb.: FBI 6: 588; FUGP 3: 343; *C. brevifolius* (Rottb.) Hassk.

In the region east of the Aravalli. Fls. & frts.: Almost throughout the year. Kota *Wadhwa* 9467; Jhalawar *Verma* 3341.

SCIRPUS L.

1.	Ovary accompanied by the bristles ...	2
	Bristles altogether absent ...	5
2.	Cluster of the spikelets terminal; stigmas 3; nut triquetrous, smooth or honey-combed ...	3
	Clusters of the spikelets lateral on the stem ...	4
3.	Nuts smooth; spikelets many.	*S. maritimus* var. *maritimus*
	Nuts honey-combed; spikelets few	*S. maritimus* var. *affinis*
4.	Style bifid; nut plano-convex; bristle hairs moniliform ...	*S. litoralis*
	Style 3-fid; nut triquetrous ...	*S. mucronatus*
5.	Stem round spongy; spikelet clusters towards the base ...	*S. articulatus*
	Stem trigonous; spikelet-clusters towards the tip of the stem ...	*S. lateriflorus*

S. maritimus var. **maritimus** L.; FBI 6: 657; FUGP 3: 363; *Bulboschoenus maritimus* (L.) Palla.

Widespread in Rajasthan (Daosa *Wadhwa* 8160; Chittor *Verma* 1624; Sea *Rao* 670370); may be found in the southeast part also.

S. maritimus var. **affinis** C. B. Clarke; FBI 6: 659.

Banswara *Verma* 231; *Majumder* 10270.

S. litoralis Schrad.; FBI 6: 659; FUGP 3: 362; *Sahoenopleotus litoralis* (Schrad.) Palla.

Widesprad in Rajasthan. Kota: Shahabad *Wadhwa* 9270; 9330; Birkhanga *Wadhwa* 9520.

S. mucronatus L.; FBI 6: 657; FUGP 3: 359. *Schoenoplectus mucronatus* (L.) Palla.

In the southeast Rajasthan. Fls. & frts.: Aug.-Sept. Shahabad: Kishangang *Verma* 699.

S. articulatus L.; FBI 6: 656; FUGP 3: 360. *Schoenoplectus articulatus* (L.) Palla.

In the region east of the Aravalli; Bansi *Verma* 1709; Banswara *Verma* 237; Bundi Hindoli *Verma* 1898. Fls.: Sept.-Jan.

S. lateriflorus Gmel. *S. supinus* L. var. *uninodis* Clarke; FBI 6: 656; FUGP 3: 360. *Schoenoplectus lateriflorus* (Gmelin) Lye.
Widespread in Rajasthan (Bansi *Verma* 1708; Banswara *Verma* 233; *Majumder* 10272). Fls. & frts.: Oct.-March. Jhalawar *Majumder* 10069; *Verma* 1897.

ELEOCHARIS R. Br.

Bristles glistening, white ...	*E. atropurpurea*
Bristles brown ...	*E. geniculata*

E. atropurpurea Kunth; F.B.I. 6: 627; FUGP 3(3): 348.
Widespread in Rajasthan. Jhalawar *Majumder* 10099. Fls. & frts.: April-Dec.

E. geniculata (L.) R. et S. *E. capitata* R. Br., FBI 6: 627.
In the region east of the Aravalli. Naka Kota *Verma* 4821. Fls. & frts.: April-Dec.

FIMBRISTYLIS Vahl, *nom. cons.*

1.	Stigmas 3; nut trigonous ...	*F. miliacea*
	Stigmas 2; nut biconvex	2
2.	Spikelets many in umbellate clusters ...	*F. bisumbellata*
	Spikelets 1-3 at the tip of the peduncle ...	3
3.	Glumes white hairy at the back above; spikelets 2-3 ...	*F. sieberiana*
	Glumes glabrous; spikelets 1-2 ...	4
4.	Nut almost cylindric; spikelets one; rhachilla with hexagonal ribs ...	*F. tetragona*
	Nut biconvex; spikelets 1, if 2, 1-pedicelled; rhachailla not as above ...	*F. schoenoides*

F. miliacea (L.) Vahl, *F. quinqueangularis* Kunth; FBI 6: 644; FUGP 3(3): 356.
Widespread. Kota *Majumder* 10482; *Jain* 28739; Baran *Majumder* 10879. Fls. & frts.: Sept.-Jan.

F. bisumbellata (Forssk.) Bub. *F. dichotoma* Clarke; FBI 6: 635; FUGP 3(3): 351.
In the region east of the Aravalli. Jhalawar *Wadhwa & Prosad* 9527; Eklera *Majumder* 10046; Kota *Wadhwa* 9345; in *F. dichotoma* Vahl, glumes and nut longer. Fls. & frts.: Aug.-June.

F. sieberiana Kunth; *F. ferruginea* Vahl, FBI 6: 638: FUGP 3(3): 354.
Widespread. Banswara *Kanodia* 30600; Banjoi forest *Vasavada* 13588. Fls. & frts.: Sept.-Jan.

E. tetragona R. Br.; FBI 6: 631.
South-east part, in marshy fields. Kota *Majumder* 10893. Fls. & frts.: Sept.-Nov.

F. schoenoides (Retz.) Vahl; FBI 6: 634; FUGP 3(3): 350.
In the region east of the Aravalli. Jhalawar: Sarhod *Wadhwa* 3579; Baran *Majumder* 10854. Fls. & frts.: Aug.-Oct.

FUIRENA Rottb.

F. ciliaris (L.) Roxb.; *F. glomerata* auct non Lamk; FBI 6: 666.
Kota: Cook et Gut.

GRAMINEAE (POACEAE)

1.	Leaf-blades pseudopetiolate and articulate; leaves on the young shoot and on their branches different; culms woody ...	2
	Leaf-blades not as above, if rarely so not articulate nor leaves of two types; culms not woody ...	3
2.	Shoots without thorny branches lower down near base; shoot-sheaths with spicular hairs only on the outer surface; shoots solid or hollow; wild, of two forms—dwarf shrubby with solid stem or tall trees with hollow shoots ...	*Dendrocalamus*
	Shoots with thorny branches near the basal part; shoot-sheaths with spicular hairs outside as well as inside; trees with hollow shoots; cultivated ...	*Bambusa*
3.	Spikelets on opposite side of the rhachis, sessile, sides of the lemmas pressed to the rhachis; grains hairy; cultivated as annual crop-plants ...	4
	Spikelets arranged otherwise, if rarely on opposite sides, then back of the lemmas pressing against the rhachis i.e. edgeways; grains variable ...	5
4.	Spikelets solitary many flowered, imbricate so that spike appearing 4-sided ...	*Triticum*
	Spikelets 3 at each node, 1-flowered	*Hordeum*
5.	Spikelets with 2 or more fertile florets ...	6
	Spikelets with single fertile floret with or without sterile florets above ...	16
6.	Panicle large feathery; florets covered by long silky hairs; lemmas more than 3-nerved ...	7
	Panicle not feathery; lemmas 1-3-nerved, if rarely more nerved spikelets strictly 2-flowered ...	8

7.	Rhachilla between the lemmas long silky hairy ; branch-initial free from the nodal part ; tall reed in marshy places ...	*Phragmites*
	Lemmas long silky hairy but rhachilla smooth ; branch-initial fused with the node ; ornamental ...	*Arundo*
8.	Lemmas more than 3-nerved ; spikelets 2-flowered ; florets facing each other ; spikelets awnless and panicled ; in marshy places ...	*Isachne*
	Lemmas 1-3 nerved ; florets usually 3 or more per spikelet ...	9
9.	Spikelets pedicelled, awnless, in open or contracted panicles ...	*Eragrostis*
	Spikelets sessile or subsessile, spicate ...	10
10.	Spikes solitary and terminal ...	11
	Spikes digitate or scattered along the main axis or racemose ...	13
11.	Spikelets awnless ...	*Eragrostiella*
	Spikelets awned ...	12
12.	Spikelets biseriate along the main axis ; lemmas lobed at the tip, 1-3-awned, may be sparsely hairy or glabrous ...	*Tripogon*
	Spikelets on all sides of the terminal part of the axis ; lemmas densely ciliated (with facies of *Chloris*) ...	*Tetrapogon*
13.	Spikes short racemose ; spikelets usually falling with part of the axis ...	14
	Spikes distinctly digitate or paired ; florets falling away one by one ...	15
14.	Glumes much overtopping the florets, caudate acuminate ; leafblades not sharp on the margins nor plants stoloniferous ...	*Dinebra*
	Glumes shorter than the florets, acute ; plants with long hard stolons and leaves with sharp margins ...	*Desmostachya*
15.	Spikes terminated by the sharp projecting axis ; lemmas short mucronate ...	*Dactyloctenium*
	Spike terminated by the spikelet ; lemmas acute ...	*Eleusine*
16.	Glumes persistent above which the florets breaking up at maturity or if spikelet falling entire strictly 1-flowered (*Polypogon*) ...	17
	Spikelets 2-flowered, with one floret only fertile at the top, the lower sterile ; spikelets dorsally compressed ; rarely floret deciduous ...	27
17.	Stamens-6 ; only two upper glumes distinct large and laterally compressed ; cultivated or wild rice ...	*Oryza*
	Stamens 3-1 ; glumes more than 2	18
18.	Upper glume with hooked bristles ; inflorescence cylindrical spike-like	*Tragus*
	Upper glume smooth and inflorescence otherwise ...	19
19.	Spikelets with 1-fertile floret at base with 1 or more sterile florets or lemmas above ...	20
	Spikelet with single floret without any sterile floret above ...	21
20.	Spikelets laterally compressed ; grain trigonous, embryo one-half the grain ; sterile florets or lemmas above well developed ...	*Chloris*
	Spikelets dorsally compressed ; grain compressed with concave ventral surface, embryo one-third the grain ; upper floret a narrow lemma attenuate with the rhachilla ...	*Enteropogon*
21.	Spikelets awned ...	22
	Spikelets awnless ...	25
22.	Awn tripartite ; inflorescence panicle ...	*Aristida*
	Awn simple ; inflorescences various	23
23.	Spikelets in congested ovoid panicle, minute but with very long awned glumes ; floret rather coriaceous	*Polypogon*
	Spikelets in small clusters along one side of a long axis or contiguous	24
24.	Spikelets in interrupted clusters and falling in a group ; glumes awned and feathery ...	*Melanocenchris*
	Spikelets biseriate but turning on one side with flexuous and contiguous awns about 3 cm long ...	*Schoenefeldia*
25.	Spikelets digitate ; lemma rather coriaceous ...	*Cynodon*
	Panicle open or congested, lemma soft ...	26
26.	Panicle open or contracted with protruding grain, not within the terminal leaf-sheath ...	*Sporobolus*
	Panicle ovoid within the terminal leaf-sheath ...	*Crypsis*
27.	Spikelets hermaphrodite or unisexual mixed up ...	28
	Spikelets unisexual, males and females in different parts of the same inflorescences or the same plant ...	68
28.	Lemmas thicker than the outer glumes and usually longer ; upper lemma seldom awned if rarely so not reduced in shape ; spikelets all similar in sex ...	29
	Lemmas usually much thinner and shorter than the glumes; upper lemmas often reduced to awn-base only ; spikelets often heteromorphic, sessile usually fertile ...	44
29.	Spikelets falling singly, bristles if any persistent on the axis ...	30
	Spikelets falling with the subtending bristles ...	43
30.	Panicle cylindrical, contracted or open ...	31
	Racemes scattered along the central axis or digitate or paired ...	35
31.	Panicle cylindrical ; spikelets falling away leaving persistent bristle or bristles on the axis ; upper lemma transversely rugose ; terrestrial ...	*Setaria*
	Panicle open or contracted, sometimes axis prolonged as bristle beyond the terminal spikelet ; upper lemma smooth ...	32
32.	The axis prolonged beyond the terminal spikelet as a bristle ; aquatic grass ...	*Pseudoraphis*
	Bristles none ; plants terrestrial ...	33

33. Spikelets awned ; upper floret indurate but falling away leaving the persistent glumes ... *Arundinella*

Spikelets falling as a whole ... 34

34. Lower lemma entire awnless ; spikelets glabrous ... *Panicum*

Lower lemma bilobed with a short awn from the sinus ; spikelets covered by long silky hairs ... *Rhynchelytrum*

35. Spikelets often awned and in 4-rows long the racemes ; on moist ground ... *Echinochloa*

Spikelets uni- or bi-seriate, awnless or awned ... 36

36. Upper lemma with flat thinly cartilaginous margins ... 37

Upper lemma hard with inrolled margins ... 38

37. Upper lemma awned as well as the glumes ... *Alloteropsis*

Glumes ill developed often 0 awnless ; lemmas awnless ... *Digitaria*

38. Pedicels terminated by a round swelling below the spikelet ; upper lemma abruptly apiculate ... *Eriochloa*

Pedicels passing gradually to the spikelet ... 39

39. Lower glume absent ; spikelet plano-convex, ovate to orbicular ... *Paspalum*

Lower glume present ; spikelets more or less rounded ... 40

40. Glumes awned ; leaf-blades lanceolate ; terrestrial creeping ... *Oplismenus*

Glumes awnless, obtuse to acuminate ; leaf-blades linear, rarely lanceolate ... 41

41. Spikelets glabrous on short racemes, pressed to the main axis ; pedicels smooth ; upper lemma acute ... *Paspalidium*

Spikelets pubescent, usually on spreading recemes ; upper lemma obtuse, abruptly mucronate ; pedicels often with cila ... 42

42. Spikelets gradually narrowed from the middle to mucronate tip ; lower glume turning away from the rhachis *Urochloa*

Spikelets rather acutish and broader beyond middle ; lower glume facing the rhachis ... *Brachiaria*

43. Bristles free to the base ... *Pennisetum*

Bristles more or less connate at the base ... *Cenchrus*

44. Spikelets of each pair similar in sex ... 45

Spikelets dissimilar, usually the sessile fertile ... 47

45. Spikes in racemes, the main axis longer than the lowest racemes ; rhachis fragile ; spikelets covered by the long silky hairs from the callus *Saccharum*

Racemes digitate or paired from the short main axis ... 46

46. Basal sheaths with thick woolly hairs ; racemes two, erect ; upper glume and upper lemma awned ... *Eulaliopsis*

Basal sheaths not woolly hairy ; racemes several woolly spreading ; only upper lemma awned ... *Eulalia*

47. Joints of the rhachis and pedicels narrow, thin, seldom thickened upwards ; sessile spikelets usually awned ... 48

Joints of the rhachis and pedicels swollen, 3-angled, rounded or flattened; sessile spikelets awned or not 62

48. Inflorescences panicle or racemose, without spathes ... 49

Inflorescences racemes or if paniculate ultimate branches within small spatheoles ... 52

49. Panicle-branches whorled ... 50

Panicle of short racemes, which are digitate or solitary and terminal ... 52

50. Spikelets dorsally compressed ; lower glume of sessile spikelet more or less flattened on the back ; pedicelled spikelets present ... *Sorghum*

Spikelets laterally compressed or terete ; lower glume rounded on the back ... 51

51. Racemes reduced to one sessile and 2 pedicelled spikelets ; lower glume smooth ... *Chrysopogon*

Racemes composed of many pairs of spikelets ; lower glume tuberculate *Veteveria*

52. Upper lemma of the sessile spikelet well developed and with a basal awn at the back ; pedicelled spikelet reduced ; leaves lanceolate, cordate -amplexicaul at base ... *Arthraxon*

Upper lemma even if awned not from the back ... 53

53. Margins of the lower glume of the sessile spikelets sharply infolded, 2-keeled, awns glabrous ... 54

Margins of the lower glumes inturned and rounded at the sides, rarely keeled upwards, awns usually densely hairy ... 58

54. Upper lemmas of the sessile spikelets usually reduced to awn-base ... 55

Upper lemma of the sessile spikelets bilobed and awned in the sinus ... 58

55. Racemes digitate or alternate ... 56

Racemes solitary or paired ; lower glume of the sessile spikelet with a circular pit on the back ; callus obtuse ... *Eremopogon*

56. Pedicels medianly translucent ... 57

Pedicels opaque ; spikelets overlapping along the whole axis ... *Dichanthium*

57. Spikelet clustered at the end of the pedicels ... *Capillipedium*

Spikelets imbricating throughout the axis ... *Bothriochloa*

58. Aromatic grasses ; racemes in pairs, supported by spathes, often collected in large panicle ... *Cymbopogon*

Grasses without scent or aroma ; racemes in pair or solitary ... 59

59. Plants drying red ; joints and pedicels clavate at the tips ... *Schizachyrium*

Plants not drying red ; joints and pedicels not clavate ... *Andropogon*

60. Racemes reduced and supported by a whorl of sterile spikelets ... 61

Raceme solitary elongated spiculate all along ; no involucrate spikelets ; spikelets with tubercle-based hairs and long twisted awns ... *Heteropogon*

61.	Involceral spikelets pedicelled, deciduous ...	*Iseilema*
	Involucral spikelets sessile persistent ...	*Themeda*
62.	Sessile spikelets awned; racemes many spiculate or reduced to few ...	63
	Sessile spikelets awnless; racemes solitary, often cylindrical ...	64
63.	Raceme 1-noded, reduced to 3 spikelets within a boat-shaped spathe, collected in large panicle; leaf-blades constricted at the base ...	*Apluda*
	Racemes many noded not spathate, 2-many; lower glume usually coriaceous, often transversely wrinkled, furrowed or with nodules on the margins ...	*Ischaemum*
64.	Sessile spikelets spherical; lower glume pitted all over; pedicelled spikelets reduced ...	*Rytilix*
	Sessile spikelets not as above; other characters variable ...	65
65.	Spikes more or less cylindrical with spikelets in the depressions on the axis ...	66
	Spikelets distinct; lower glume on the margins with worty projections with tuft of hairs ...	*Elyonurus*
66.	Spike tough; spikelets paired ...	*Hemarthria*
	Spikes fragile; spikelets paired or solitary ...	67
67.	Sessile spikelets in pairs at each node ...	*Mnesithia*
	Sessile spikelet solitary at each node; pedicelled suppressed or rudimentary ...	*Ophiuros*
68.	Female spikelets basal and males terminal on the same inflorescence	69
	Male spikelets in the terminal panicle and females on the axillary spadix ...	*Zea*
69.	Female spikelet completely encircled by the hard ovate bead-like structure ...	*Coix*
	The covering of the female spikelets open at one side, inflorescences often bracteate ...	*Chionachne*

DENDROCALAMUS Nees

D. strictus Nees; FBI 7: 404.

In the region east of the Aravalli, also in Mt. Abu. Jhalawar: Pirawa *Verma* 6841. The only wild bamboo of the area; the dwarf-form grows in the open areas, whereas, the tree-form within the moist deciduous forest.

BAMBUSA Retz. corr. Screb.

B. arundinacea (Retz.) Roxb; FBI 7: 395.

Cultivated sparingly in the area; Jhalawar: Raipur-Belghar *Wadhwa* 5493.

TRITICUM L.

T. aestivum L.; FBI 7: 367.

Cultivated; sown in Oct.-Nov. and harvested from the middle of March to the end of April. The Wheat.

HORDEUM L.

H. vulgaris L.; FBI 7: 371.

Cultivated; sown in Oct.-Nov. and harvested in March-April.

PHRAGMITES L.

P. karka (Retz.) Trin. ex Steud.; FBI 7: 304.

In the region east of the Aravalli; also reported from the Luni river basin near Jodhpur. Udaipur *Verma* 85; *Majumder* 10353.

ARUNDO L.

A. donax L.; FBI 7: 302.

Native of tropical Asia and the Mediterranean region. In the area cultivated in the garden as ornamental; in var. *versicolor* (Mill.) Stokes—the leaf-blades are stripped with yellow and white or green.

DINEBRA Jacq.

D. retroflexa (Vahl) Panz. var. **condensata** S. M. Phillips.; *D. arabica* Jacq.; FBI 7: 297.

In the region east of the Aravalli. Fls. & frts.: Sept.-March. Jhalawar: Dug *Vtrma* 6752; *Majumder* 10118; Hathi Khedi Blcck *Wadhwa* 7677.

ERAGROSTIS Wolf

1.	Keel of the palea ciliated ...	2
	Keel of the palea not ciliated ...	4
2.	Panicle spiciform dense ...	3
	Panicle open with spreading branches, often glandular; annual ...	*E. tenella*
3.	Lemmas ciliate on the keels, at least the upper mucronate; panicle woolly; stamens 2; annual ...	*E. ciliaris*
	Lemmas eciliated on the keels and rounded at the apex; branches filiform; panicle not woolly; stamens 3; perennials ...	*E. riparia*

4. Lemmas 1 mm long or shorter ; panicle branches up to 5 cm long or shorter ; stamens 2 ... 5
Lemmas longer ; panicle branches alternate or whorled ... 6
5. Panicle branches more or less whorled ; spikelets few flowered ; lemmas less than 1mm long ... *E. japonica*
Panicle branches usually alternate ; spikelets 6-14-flowered ; lemma 1 mm long ... *E. diarrhena*
6. Pedicels capillary more than twice the linear spikelets, erect ; lemmas obtuse or truncate ; leaf-blades with long spreading hairs at basal part ... *E. aspera*
Pedicels usually shorter if longer trembling with spikelets (*E. tremulus*) ; other characters variable ... 7
7. Plants glandular, at the base of the inflorescence branches, on the keel of the lemma, on the pedicels or on the leaf-blades ... 8
Plants eglandular ... 10
8. Spikelets hardly 1 mm wide; lower glume minute, hyaline ; panicle branches whorled, glandular at base as also the leaf-blades ; stamens 3 ... *E. pilosa*
Spikelets broader ; lemmas 1.5 mm long or longer ; panicle branches alternate ... 9
9. Pedicels with crateriform glands and also leaf-margins ; spikelets 1.2-2 mm wide ; lemmas 1.5-2 mm long ; grain oblong ... *E. minor*
Pedicels eglandular lemmas and leaves glandular on the keels ; spikelets 2 mm broad or broader ; lemmas longer ... *E. cilianensis*
10. Lemmas up to 1.5 mm long ; spikelets 1.25 mm wide ... 11
Lemmas longer and spikelets wider ... 12
11. Lemmas 1-1.25 mm long, obtuse or acute ; inflorescence branches alternate ; grain subglobose ; annual in low lands ... *E. gangetica*
Lemmas 1.25-1.5 mm long, almost acuminate from the side ; inflorescence branches often whorled ; grain oblong ; annual in hilly region, rare ... *E. multicaulis*
12. Pedicels over 5 mm long trembling with up to 2 cm long spikelets ; lemmas 2 mm long, subobtuse ; grain globose ... *E. tremula*
Pedicels strict erect with smaller spikelets ... 13
13. Grain 1 mm long or longer ; spikelets 1.5 mm wide, oblong ; annual, rare ... *E. tef*
Grain smaller 0.5-0.6 mm long ; spikelets wider ... 14
14. Spikelets ovate almost as broad at base as its length, purplish ; lemmas 2-2.5 mm long closely imbricating ; annual ... *E. unioloides*
Spikelets oblong, whitish ; lemmas 1.5-1.8 mm long ; perennial ... *E. atrovirens*

E. riparia (Willd.) Nees; *E. tenella* R. et S. var. *riparia* Stapf; FBI 7: 315.

In the region east of the Aravalli; Banswara *Majumder* 10223 B.

E. ciliaris (L.) R. Br.; FBI 7: 314.

Very common in the western part, but rare in the eastern Rajasthan ; Kota *Majumder* 43151.

E. pilosa (L.) P. Beauv.; FBI 7: 323.

Throughout Rajasthan (Chittor *Majumder* 10395), Kota *Majumder* 10469; 13246; 13283. Characteristic feature is the spreading hairs in the axils of the inflorescence branches, for glands may be rarely absent and thus difficult to segregate from *E. multicaulis* except lesser number of stamens in that species.

E. multicaulis Steud.

East of the Aravalli in the hilly parts, rather rare; Banswara *Majumder* 10229.

E. minor Host; FBI 7: 321; *E. pooides* P. Beauv.; *E. pappiana* (Chiov.) Chiov.

Widespread in Rajasthan; Bhowanimandi *Verma* 3505; Monoharthana *Verma* 3483.

E. cilianensis (All.) Lutati; *E. major* Host; FBI 7: 320.

In the region east of the Aravalli; Udaipur *Majumder* 1249B; 103324.

E. tenella (L.) R. et S.; FBI 7: 315. var. *viscosa* Stapf FBI 7: 315. *E. viscosa* (Rttz.) Trin.

Widespread in Rajasthan. Jhalawar *Verma* 3363; *Wadhwa* 7467; Misroli *Wadhwa* 7657. There is little doubt that *E. tenella* and *E. viscosa* are linked by intermediates. According to Clayton (Fl. Trop. East Africa, Gramineae, pt. 2: 206. 1974), there seems no point in making a formal taxonomic distinction. I also failed to sort out specimens that can be referred to distinct *E. viscosa* population.

E. gangetica (Roxb.) Steud.; *E. stenophylla* Hochst.; FBI 7: 318.

Widespread in Rajasthan in moist places; often confused with much larger perennial.

E. atrovirens having broader and longer lemmas; Kota *Majumder* 10869; 10479.

E. atrovirens (Desf.) Steud.; Bor, Grasses 503.

Common in the region east of the Aravalli by the sides of the canals and streams; Fls. & frts.: Sept.-March. Kota *Majumder* 13283; Shahabad *Majumder* 13288A; Bijliya Bhadak *Wadhwa* 5335; Naka Kota *Verma* 445; Kishanganj *Verma* 685.

E. unioloides (Retz.) Nees ex Steud.; *E. amabilis* Stapf; FBI 7: 317.

Throughout Rajasthan. Fls. & frts.: Sept.-April. Jhalawar *Wadhwa* 5323; *Verma* 3331; Shahabad *Majumder* 10448.

E. tremula Hochst. ex Steud.; FBI 7: 320.

Widespread in Rajasthan (Dungerpur *Majumder* 10361; Chaumu *Wadhwa* 8350). Fls. & frts.: Sept.-March. Kota *Majumder* 13259; 10369; Banswara *Kanodia* 75595.

E. aspera (Jacq.) Nees; FBI 7: 314.

Rather rare in the area. Jhilawar *Verma* 3341.

E. tef (Zucc.) Trotter.

In the southeast Rajasthan. Fls.: April. Kota: Shahabad *Majumder* 13200; Monoharthana *Verma* 3465; 3483; a staple cereal of Ethiopia.

E. diarrhena (Schult) Steud.; *E. interrupta* var. *koenigii* Stapf ex Hook. f.; FBI 7: 316.

In the south and south-east Rajasthan, usually in damp places. Fls. & frts.: Sept.-March. Kota *Majumder* 10013; 10130; 10122; Eklera *Majumder* 10045; Jhalawar *Majumder* 10391; Dug, Naolekha *Wadhwa* 6746.

E. japonica (Thunb.) Trin.; *E. interrupta* var. *tenuissima* Stapf ex. Hk. f. FBI 7: 316.

In the region east of the Aravalli; Jhalawar Eklera *Majumder* 10045; Bhowanimandi *Verma* 3494; Bansi *Verma* 3494.

ERAGROSTIELLA Bor

E. brachyphylla (Stapf) Bor; *Eragrostis brachyphylla* Stapf. FBI 7: 327.

In the south and southeast Rajasthan. Fls. & frts.: Sept.-March. Kota: Shahabad *Majumder* 10464; Bijliya Bhadak *Wadhwa* 5327; 7475; Kishanganj *Verma* 729; 668.

ELEUSINE Gaertn.

E. indica (L.) Gaertn.; FBI 7: 293.

Throughout Rajasthan. Fls.: Almost throughout the year. Jhalawar *Wadhwa* 5453; *Verma* 6747; Kishanganj *Verma* 691.

DACTYLOCTENIUM Willd.

D. aegyptium (L.) Willd.; *Eleusine aegyptiaca* (L.) Desf.; FBI 7: 295.

Throughout Rajasthan. Fls. & frts.: Sept.-March. Kota: Shahabad *Verma* 646; 438; Kishanganj *Verma* 746.

DESMOSTACHYA Stapf

D. bipinnata (L.) Stapf.; *Eragrostis cynosuroides* (Retz.) P. Beauv.; FBI 7: 324.

Throughout Rajasthan. Jhalawar: Eklera *Wadhwa* 9582; Kuno river bank *Verma* 447.

TRIPOGON R. & S.

Lemma bilobed with an awn in the sinus, side-lobes not awned, awn shorter than the lemma; leaves up to 20 cm long, filiform, with definite ligule ...	*T. jacquemontii*
Lemma 4-lobed, 4-awned; leaves as long as the culms or shorter, convolute and filiform ...	*T. bromoides*

T. jacquemontii Stapf; FBI 7: 286.

In the region east of the Aravalli; Fls. & frts.: Sept.-Jan. Jhalawar Kokanda Denwas *Wadhwa* 5405; Kota *Majumder* 10148; Misroli *Wadhwa* 7654.

T. bromoides R. & S.; FBI 7: 287.

In the southeastern Rajasthan. Fls.: Aug.-Sept. Kota: Kishanganj *Verma* 721.

SPOROBOLUS R. Br.

Upper glume shorter than the lemma; lowest branches of panicle alternate; lemma 1 mm long or less; stamens 3 ...	*S. tenuissimus*

Upper glume almost equalling the lemma or exceeding it; lowest branches of the panicle whorled; stamens 3 *S. coromandelianus*

S. tenuissimus (Schrak.) Ktze.; *S. minutiflorus* (Trin.) Link; FBI 7: 248.

Throughout Rajasthan. Fls. & frts.: Aug.-Dec. Kishanganj *Verma* 731; Shahabad *Verma* 652; Jhalawar *Wadhwa* 7454; Bijliya Bhadak *Wadhwa* 5332; Kota *Verma* 442; Shahabad *Majumder* 10479.

S. coromandelianus (Retz.) Ktze.; FBI 7: 252.

Throughout Rajasthan. Fls.: Aug.-Oct. Kota: Shahabad *Majumder* 13150.

CRYPSIS Ait.

C. schoenoides (L.) Lamk.; *Heliochloa schoenoides* (L.) Host.; FBI 7: 235.

Throughout Rajasthan in the saline tracts. Fls. & frts.: Feb.-April. Jhalawar: Kalisind river bed *Verma* 3393.

MELANOCENCHRIS Nees

M. jacquemontii Jaub. et Spach; *Gracilia royleana* Hook. f.; FBI 7: 284.

Throughout Rajasthan, in the rock crevices. Fls.: Sept.-Feb. Jhalawar: Bijliya Bhadak *Wadhwa* 5344; Kota *Verma* 406.

TETRAPOGON Desf.

T. tenellus (Roxb.) Chiov. *Chloris tenella* Roxb. FBI 7: 289.

Common in the rocky places. Fls.: Sept.-Nov. Kota: Kishanganj *Verma* 738.

SCHOENEFELDIA Kunth

S. gracilis Kunth; *Chloris pallida* Hook. f.; FBI 7: 289.

Throughout Rajasthan. Fls.: Aug.-Oct. Kota: Shahabad *Majumder* 10859.

CHLORIS Sw.

C. virgata Sw.; FBI 7: 291.

Throughout Rajasthan. Fls. & frts.: Aug.-Jan. Jhalawar *Majumder* 10117; Kota *Verma* 453; Puraniya *Verma* 749.

ENTEROPOGON Nees

E. dolichostachyus (Lagasc.) Keng ex Lazar; *Chloris incompleta* Roth; FBI 7: 290.

In the southeast Rajasthan. Fls.: Oct.-Nov. Kota: Shahabad *Majumder* 13117.

CYNODON Pers.

Lemmas longer than the upper glume, with simple hairs ... *C. dactylon*

Lemmas equal to, shorter or slightly longer than the upper glume, hairs swollen at the tips or clavellate ... *C. barberi*

C. dactylon (L.) Pers.; FBI 7: 288.

Throughout Rajasthan.

C. barberi Rang. et Tad.

In the southeast Raajsthan. Fls.: Aug.-Sept. Kota *Verma* 435.

POLYPOGON Desf.

P. monspeliensis (L.) Desf.; FBI 7: 245.

In the region east of the Aravalli: Jaisamand *Verma* 79; Udaipur *Verma* 1; Jaipur *Wadhwa* 8305; Chittor *Majumder* 10394. Fls.: March-May.

ARISTIDA L.

1. Awns not articulated above the lemma ... 2

   Awns articulated at the top of the lemma, followed by 4.5 cm long column; long white hairs often present on the axils and on the pedicels and also on the leaves at the base *A. funiculata* var. *funiculata*

2. Lateral awns much reduced, often very minute; glumes subequal; lemma about 4 mm long, passing to the twisted column of the awn ... *A. reducta*

   Lateral awns distinct like the central; panicle contracted; glumes with 2 mm long mucro ... 3

3. Lemma slightly longer than the upper glume or equalling ... *A. adscensionis* var. *adscensionis*

   Lemma about 4 mm longer than the upper glume ... *A. adscensionis* var. *pumila*

A. redacta Stapf; FBI 7: 227.

In the southeast Rajasthan. Fls.: Dec.-Jan. Jhalawar *Majumder* 10011.

A. adscensionis L. var. **adscensionis**; FBI 7: 224.

Common in the rocky plains by the roadsides and forest clearings. Fls. & frts.: Sept.-Jan. Jhalawar *Majumder* 10076; Sarhod *Wadhwa* 7652; Pirawa *Wadhwa* 7676.

A. adscensionis L. var. **pumila** (Dcne.) Coss. et Dur.

Throughout Rajasthan. Fls.: Aug.-Dec. Jhalawar *Majumder* 10066; Dani Talao *Verma* 1768.

A. funiculata Trin. et Rupr.; FBI 7: 226.

Throughout Rajasthan. Fls.: Aug.-Dec. Kota: Shahabad *Verma* 648; 725; 726; Jhalawar *Wadhwa* 5395; Kishanganj *Verma* 727.

TRAGUS (Hall.) Scop. nom. cons.

T. roxburghii Panigrahi; *T. racemosus* Hk. f.; FBI 7: 97 (non Scop.)

Throughout Rajasthan: Jaipur *Wadhwa* 4827; Banswara *Majumder* 10257; Kota: Shahabad *Verma* 450.

ORYZA L.

Spikelets persistent, usually awnless; cultivated as annual crop ...	*O. sativa*
Spikelets deciduous, often long awned; perennial, wild rice ...	*O. rufipogon*

O. sativa L.; FBI 7: 92.

It is grown in the heavy soils of the districts of Banswara, Dungerpur, Bundi, Sikar, Udaipur and Sawai Madhopur—Sen and Abraham (1966).

O. rufipogon Griff.

In jheels. Kota *Majumder* 10246.

ISACHNE R. Br.

Spikelets over 2 mm long; panicle large; leafblades narrowly lanceolate ...	*I. globosa*
Spikelets 2 mm long; leaves ovate-lanceolate; panicle small, laxly flowered ...	*I. miliacea*

I. globosa (Thunb.) O. Ktze.; *I. australis* R. Br.; FBI 7: 24.

Growing profusely in the moist rice-fields. Shahabad *Majumder* 10445.

I. miliacea Roth; FBI 7: 25.

Common in the wet rice field or lake sides. Kota: Sitabari *Wadhwa* 9313; Udaipur *Rao* 66543.

ARUNDINELLA Raddi

A. setosa Trin.; FBI 7: 70.

In the southeast Rajasthan. Udaipur *Majumder* 10357.

ALLOTEROPSIS J. S. Presl ex C. B. Presl.

A. cimicina (L.) Stapf; *Axonopus cimicinus* (L.) P. Beauv.; FBI 7: 64.

In the region east of the Aravalli. Fls.: Aug.-Nov. Shahabad *Verma* 407; 451; Puraniya *Verma* 771; Bijliya Bhadak *Wadhwa* 7415; Kota *Wadhwa* 1527 A.

DIGITARIA Heist. ex Fabricius

1.	Spikelets less than 2 mm long. ...	2
	Spikelets more than 2 mm long ...	4
2.	Spikelets supported at the base by a whorl of cilia; hairs on the spikelets swollen at the tip or clavate ...	*D. stricta*
	Pedicels without cilia at the top. ...	3
3.	Tip of the inner lemma protruding out of the inner glume and the outer lemma; racemes more than 3, usually alternate; hairs on the spikelet swollen at the tip or clavate ...	*D. abludens*
	Tip of the inner lemma not protruding nor hairs clavate, but curled; racemes 3 or 2 ...	*D. longiflora*
4.	Sessile spikelets apparently glabrous, while pedicelled with spreading hairs ...	*D. bicornis*
	Spikelet-pairs both glabrous or with spreading hairs ...	5
5.	Spikelets lanceolate to linear-lanceolate with apparently 3-nerves visible; racemes few; a delicate annual in the shade ...	*D. radicosa*
	Spikelets elliptic-lanceolate or oblong-elliptic with 5-7-nerves visible	*D. ciliaris*

D. stricta Roth ex R. et S.; *Paspalum royleanum* Nees ex Thw: FBI 7: 18.

In the region east of the Aravalli including Mt. Abu. Kota *Nanda* 410; *Agarwal* 416. CAL.; Eklera *Wadhwa* 7532.

D. abludens (Retz.) Koelr.; *D. adscendens* (Trin.) Henr.; *Paspalum pedicillare* Steud.; FBI 7: 17.

In the region east of the Aravalli. Fls.: Oct.-Dec. Jhalawar *Wadhwa* 7453; Kapildhara: Puraniya *Verma* 776.

D. longiflora (Retz.) Pers.; *Paspalum longiflorum* Retz.; FBI 7: 17.

Throughout Rajasthan. Fls.: Aug.-Oct. Jhalawar *Wadhwa* 7477; Bijliya Bhadak *Wadhwa* 7401.

D. bicornis (Lamk.) R. et S.; *D. ciliaris* ssp. *chrysoblephara* S. T. Blake. *D. biformis* Willd.

Common in the area.

D. radicosa (Presl.) Miq.; *D. timorensis* (Kunth) Bal. *Paspalum sanguinale* var. *debile* Hk. f.; FBI 7: 17.

South-eastern Rajasthan. Fls.: Sept.-Oct. Kota *Majumder* 11642.

D. ciliaris (Retz.) Koelr.; *D. adscendens* (HBK) Henr.

In the region east of the Aravalli, as well as in the western part. Kota *Verma* 440; Udaipur *Majumder* 10363; Jaisalmer *Wadhwa* 5203.

PANICUM L.

1.	Spikelets under 2 mm long; lower glume more than half of the spikelet; upper glume 3-nerved glabrous; dwarf grass ...	*P. walens*
	Spikelets over 2 mm long; lower glume of various lengths ...	2
2.	Lower glume not as above nor spikelets gaping at maturity ...	3
	Lower glume cuspidate-acuminate, more than half of the spikelet; spikelets c. 3 mm long, widely gaping at maturity, pinkish ...	*P. trypheron*
3.	Inflorescence spiciform; upper glume 5-nerved; root-stock long creeping; nerves of the glumes not anastomosing ...	*P. repens*
	Panicle open, large; nerves of the glumes anastomosing; upper glume 11-13-nerved root-stock not long ...	*P. sumatrense*

P. walens Mez; Clayton in Kew Bull 20: 264. 1966. *P. humile* Nees ex Steud.; FBI 7: 48.

In the region east of the Aravalli. Fls.: Aug.-Dec. Sarhod *Wadhwa* 3570; Shahabad *Majumder* 10462; 13202.

P. trypheron Schult.; FBI 7: 49.

In the region east of the Aravalli. Fls.: Sept.-Dec. Jhalawar: Eklera *Wadhwa* 7498; *Nanda* 464.

P. repens L.; FBI 7: 49.

In the region east of the Aravalli in moist places. Fls.: Sept.-Dec. Banswara *Majumder* 10300; *G. King* n.s. (CAL.), Bundi: Mangli river bank *Verma* 1870; Kishanganj *Verma* 658; Shahabad *Majumder* 10438.

P. sumatrense Roth ex R. et S.; *Panicum miliare* Hk. f., *P. psilopodium* Trin.; FBI 7: 47. Jhalawar: Bijliya Bhadak *Wadhwa* 5336; Kota *Verma* 428; 436; 429.

The *small millet* is grown at Sirohi, Dungerpur and Banswara, to a lesser extent to in Jalore, Pali, Bhilwara and Udaipur.

BRACHIARIA Griseb.

1.	Spikelets under 2.5 mm long ...	2
	Spikelets 2.5 mm long or longer, turgid; pedicels sometimes with very few. cilia and spikelets are also loose (approaching *B. deflexa* sensu Bor) ...	*B. ramosa*
2.	Racemes erect; leaf-blades 2-5 mm wide, rounded at base ...	*B. eruciformis*
	Racemes more or less spreading; leaf-blades wider, cordate and amplexicaul at base.	*B. reptans*

B. eruciformis (J. E. Sm.) Griseb.; *Panicum isachne* R. et S.; FBI 7: 28.

In the South (Pratapgarh *Majumder* 10202) and southeast Rajasthan. Fls.: Aug.-Dec. Eklera *Wadhwa* 9583; 7615; Hathi Khedi Block *Wadhwa* 7675.

B. reptans (L.) Gard et C. E. Hubb.; *Panicum prostratum* Lamk.; FBI 7: 33.

In the region east of the Aravalli. Kota: *Verma* 431.

B. ramosa (L.) Stapf; *Panicum ramosum* L.; FBI 7: 36.

Throughout Rajasthan: Kuri *Wadhwa* 5252, including Mt. Abu: *G. King* n. s. 1868. Kota *Verma* 434; Puraniya *Verma* 655; Lotia Jhir *Wadhwa* 5454. *B. deflexa* (Schum.) C. E. Hubb. ex Robyns, is recently upgraded to *Pseudobrachiaria deflexa* (Schum.) Launert in Mitt. Bot. Staatssamml. München 8: 158. 1970.

The Indian materials intergrading to *B. ramosa* and hence is treated under that species in difference to the identification of Bor (1960).

UROCHLOA P. Beauv.

1.	Lower lemma with a fringe of bristles. ...	2
	Lower lemma without bristles ...	3
2.	Spikelets glabrous ...	var. *marathensis*
	Spikelets velvety pubescent ...	var. *velutina*
3.	Spikelets glabrous ...	var. *panicoides*
	Spikelets pubescent ...	var. *pubescence*

U. panicoides P. Beauv.; *Panicum javanicum* Hk. f.; FBI 7: 35.

Throughout Rajasthan. Fls.: Aug.-Jan.

U. panicoides var. **panicoides**

In the south: Chittor *Nanda* 486, CAL.; and southeast Rajasthan. Jhalawar *Wadhwa* 7441.

U. panicoides var. **velutina** (Henr.) Bor

In southeast Rajasthan. Hathi Khedi Block *Wadhwa* 7668; Shahabad *Majumder* 10810.

U. panicoides var. **pubesence** (Kunth) Bor

Throughout Rajasthan. Chandrapura *Verma* 1803; Shahabad *Verma* 430; 448; Eklera *Wadhwa* 7603; Kota *Nanda* 447.

ECHINOCHLOA P. Beauv.

1.	Spikelets awnless; ligule obscure	2
	Spikelets awned; ligule obscure or definite ...	3
2.	Spikelets 2.5-3 mm long ...	*E. colonum*
	Spikelets more than 3 mm long ...	*E. crusgalli* var. *submutica*
3.	Ligule a fringe of hairs ...	*E. stagnina*
	Ligule obscure ...	*E. crusgalli* var. *crusgalli*

E. colonum (L.) Link. *Panicum colonum* L.; FBI 7: 32.

Throughout Rajasthan; Fls.: Aug.-Jan. Lotia-Jhir *Wadhwa* 5471; Jhalawar *Wadhwa* 7499; *Verma* 3385; Kalisind river bed *Verma* 3392; Ameth *Verma* 3439; Kishanganj *Verma* 680; 690; Shahabad *Verma* 452; 427.

E. crusgalli (L.) P. Beauv. var. **crusgalli**; *Panicum crusgalli* L. FBI 7: 30.

Throughout Rajasthan including Mt. Abu (G. King n. s. 1868). *B. D. Patil* 476.

E. crusgalli var. **submutica** Neilr.

Common in the adjoining districts.

E. stagnina (Retz.) P. Beauv. *Panicum crusgalli* Hk. f. p. p. FBI 7: 30.

In the southeast Rajasthan. Jhalawar *Majumder* 10462; Samrania village *Wadhwa* 9359.

PASPALUM L.

Spikelets acute, elliptic-oblong; upper glume green, minutely appressed hairy ...	*P. paspaloides*
Spikelets obtuse, almost orbicular; upper glume glabrous thin and white ...	*P. scrobiculatum*

P. paspaloides (Michx.) Schribn.; *P. distichum* Hk. f.; FBI 7: 12.

In the region east of the Aravalli. Jhalawar *Wadhwa* 7510; Shahabad *Majumder* 10445; *Verma* 700.

P. scrobiculatum L. *P. scrobiculatum* var. *commersonii* (Lamk.) Stapf; FBI 7: 12.

In the south and southeast Rajasthan. Fls.: Sept.-Nov. Jhalawar: Eklera *Wadhwa* 7504.

PASPALIDIUM Stapf

Lower and upper glumes subequal, distinctly much shorter than the spikelets; terrestrial ...	*P. flavidum*
Lower and upper glumes unequal; upper almost equalling the spikelets; usually growing in moist places ...	*P. geminatum*

P. flavidum (Retz.) A. Camus; *Panicum flavidum* Retz.; FBI 7: 28.

In the region east of the Aravalli. Fls.: Aug.-Dec. Kota *Agrawal* 424; Jhalawar: Kokanda Denwas *Wadhwa* 5424; Shahabad *Verma* 653; 670; 455; 449.

P. geminatum (Forssk.) Stapf; *Paspalum paspalodes* Hk. f.; FBI 7: 30.

Widespread in Rajasthan. Udaipur *Verma* 13; 14; Dungerpur *Verma* 140; Patarpgarh *Majumder* 10181; Fls.: Aug.-Dec. Bundi *Verma* 1849; Pirawa *Verma* 6855; Kota *Wadhwa* 9456.

SETARIA P. Beauv.

1.	Bristles with downwardly projecting barbs ; spikes cylindrical ; bristle solitary below the spikelet ...	*S. verticillata*
	Bristles with upwardly projecting barbs ...	2
2.	Bristle solitary below the spikelet ; leaves often plicate ...	*S. tomentosa*
	Bristles in a whorl below the spikelet ...	3
3.	Upper glume equalling the upper lemma ...	*S. italica*
	Upper glume shorter than the upper lemma ...	*S. pumila*

S. verticillata (L.) P. Beauv. ; FBI 7: 80.

Widespread in Rajasthan. Fls.: Sept.-Dec. Lotiajhir *Wadhwa* 5472 ; Asnawar *Verma* 6894 ; Jhalawar *Majumder* 10027 ; Piplosa *Verma* 6957 ; Bijliya Bhadak *Wadhwa* 5361 ; Bundi Hindoli *Verma* 1884.

S. tomentosa (Roxb.) Kunth ; *S. intermedia* (Roth) R. et S. ; FBI 7: 79.

Widespread in Rajasthan. Fls.: Sept.-Dec. Eklera *Wadhwa* 7650; Bundi *Verma* 1846; Piplosa *Verma* 6957; Shahabad *Verma* 650.

S. italica (L.) P. Beauv.; FBI 7: 78.

Kota *Verma et al.*, probably an escape from the cultivation.

S. pumila (Poir.) R. et S. ; *S. pallide-fusca* (Schum.) Stapf et Hubb.; *S. glauca* ; FBI 7: 78.

In the south and south-east Rajasthan. Jhalawar *Wadhwa* 7468; Kokanda, Denwas *Wadhwa* 5406; Barpatti, Piplaj *Wadhwa* 956; Shahabad *Verma* 437; Kishanganj *Verma* 742.

PENNISETUM L. Rich.

Lower and the upper lemmas more or less similar ; bristles and rahchis of the spikes scabrous ...	*P. hohenackeri*
Lower and the upper lemmas of the spikelet dissimilar, lower trilobed but upper entire ; bristles copiously woolly ...	*P. pedicillatum*

P. hohenackeri Hochst. ex Steud. ; *P. alopecurus* Steud. ; FBI 7: 84.

In the region east of the Aravalli, including Mt. Abu (*G. King* n.s. 1868). Jhalawar *Verma* 3346 ; *Majumder* 10065 ; Shahabad *Verma* 684; Hathi Khedi *Wadhwa* 7690; Pirawa *Verma* 6834.

P. pedicillatum Trin.; FBI 7: 86.

In the region east of the Aravalli, including Mt. Abu (*Duthie* 6740); Kishanganj *Verma* 713; Chandrapura *Verma* 1828; Eklera *Wadhwa* 3543; *Majumder* 10025.

Occasionally *P. americanum* (L.) Leeke (*P. typhoideum* L. Rich.) is cultivated.

CENCHRUS L.

1.	Bristles or spines retrorsely barbed, outer bristles in one row, ultimately spreading or reflexed, hook-like, inner glabrous on the back ...	*C. biflorus*
	Bristles with upwardly projecting hairs ; other characters variable. ...	2
2.	Bristles connate at their very base, under 1.5 cm long ...	*C. ciliaris*
	Bristles connate forming a cup, outer few, inner with narrow flattened and short tips ...	*C. setigerus*

C. biflorus Roxb. ; *C. catharticus* Del. ; FBI 7: 90.

Widespread in Rajjasthan. Udaipur *Majumder* 10322 ; Jaisalmer *Wadhwa* 4982 ; Ajmer *Duthie* 499 ; *Dhruma*-D-9.

C. ciliaris L. ; *Pennisetum cenchroides* Rich. ; FBI 7: 88.

Common throughout Rajasthan.

C. setigerus Vahl ; *C. biflorus* Hk. f. ; FBI 7: 89.

Widepsread in Rajasthan. Ajmer *D. Prain* 1896 ; Mt. Abu *G. King* 1868 ; Phalsund *Wadhwa* 4779.

OPLISMENUS P. Beauv.

O. burmannii (Retz.) P. Beauv. ; FBI 7: 68.

In the south. Chittor *Agrawal* 503 ; Bansi *Verma* and in southeast Rajasthan. Jhalawar *Wadhwa* 7410 ; 54601 ; Shahabad *Majumder* 10838.

ERIOCHLOA H. B. K.

E. fatmensis (Hochst. et Steud.) Clayton ; *E. nubica* (Steud.) Hack. et Stapf ex Thell.

In the region east of the Aravalli. Kota: Kishanganj *Verma* 749.

PSEUDORAPHIS Griff.

P. spinescens (R. Br.) Vickery; *Chamaeraphis spinescens* (R. Br.) Poir; FBI 7: 62.

In the region east of the Aravalli. Jhalawar: Eklera *Verma* 7356; Majumder 10067.

RHYNCHELYTRUM Nees

R. repens (Willd.) C. E. Hubb.; *Tricholaena teneriffae* Hk. f.; FBI 7: 65.

In the southeast Rajasthan. Eklera *Majumder* 10009.

SACCHARUM L.

S. spontaneum L.; FBI 7: 118.

Widespread in Rajasthan. Jhalawar: Bijliya Bhadak *Wadhwa* 7501; Sarhod *Wadhwa* 7686; Pirawa *Wadhwa* 6848.

The sugar-cane, *S. officinarum* L. is cultivated in the region to small scale.

EULALIOPSIS Honda

E. binata (Retz.) C. E. Hubb. *Ischaemum angustifolium* (Trin.) Hack.; FBI 7: 129.

In the south-east Rajasthan. Jhalawar: Manoharthana *Verma* 3482; *Bhabar Sabai.*

EULALIA Michx.

E. trispicata (Schult.) Henr.; *Pollinia argentea* Trin.; FBI 7: 111.

In the region east of the Aravalli including Mt. Abu (*Rao* 66615). Bijliya Bhadak *Wadhwa* 7586; Rampuriya *Wadhwa* 6847.

SORGHUM Moench.

1. Sheath nodes with long hairs; sessile spikelets flask-shaped, densely and coarsely hirsute with long hairs, almost black on maturity; glumes narrowed upward into a beak; primary branches undivided ... *S. deccanense*
   Sheath-rodes glabrous or finely pubescent, not bearded; primary branches of the panicle branched; upper lemma not black on maturity ... 2
2. Leaf-blades 5 mm-3 cm wide; panicle contracted ... *S. halepensis*
   Leaf-blades 2-4 cm wide; panicles very large and open ... *S. miliaceum*

S. halepensis (L.) Pers.; *Andropogon halepensis* (Hack.) Stapf; FBI 7: 183.

Widespread in Rajasthan. Jhalawar *Majumder* 10108. Closely related to *S. miliaceum* but a less robust plant and with contracted panicle.

S. miliaceum (Roxb.) Snowden

In the south. Chittor *Majumder* 11610; Udaipur *Majumder* 11625 and in south-east Rajasthan. Manoharthana *Wadhwa* 3549.

S. deccanense Stapf ex Bor

In the south. Chittor *Majumder* 12437; 10144; Pratapgarh *Majumder* 12254; Banswara *Majumder* 10229.

VETIVERIA Bory

V. zizanioides (L.) Nash; *Andropogon squarrosus* L. f. nom. cons.; FBI 7: 186.

Widespread in Rajasthan. Shahabad *Verma* 667; Bijliya Bhadak *Wadhwa* 7489; Kishanganj *Verma* 743; Shahabad *Majumder* 10454.

CHRYSOPOGON Trin.

1. Pedicels half the length of the sessile spikelets or longer, almost glabrous; panicles contracted; awns 12-18 mm long ... *C. echinulatus*
   Pedicels shorter than one-half of the sessile spikelets, hairy at the top ... 2
2. Leaves distichous; lower leaf-sheaths compressed; upper glume of the sessile spikelets with golden or golden-brown hairs; sessile spikelets 4-6 mm long; pedicelled spikelets 4 mm long; callus of the sessile spikelets much shorter ... *C. fulvus*
   Leaves conspicuously distichous; panicle narrow, 12 cm long and 2.5 cm broad, interrupted; callus of the sessile spikelets 3 mm long ... *C. polyphyllus*

C. fulvus (Spreng.) Chiov. *Andropogon monticola* R. & S.; FBI 7: 192.

In the south. Chittor *Verma* 1617; *Majumder* 10140 and south-east Rajasthan. Jhalawar: Kokanda Denwas *Wadhwa* 5403.

C. polyphyllus (Hack.) Blatt. et McCann; *Andropogon polyphyllus* Hook. f.; FBI 7: 194.

In the southeast Rajasthan. Fls.: Nov.-Dec. Eklera *Majumdr* 10039.

C. echinulatus (Nees) W. Wats.; *Andropogon gryllus* ssp. *echinulatus* Hack; FBI 7: 188.

In the south (Chittor *Verma* 1679; *Majumder* 10212) and southeast Rajasthan. Shahabad *Majumder* 13292; 13296.

CAPILLIPEDIUM Stapf

Hairs on the pedicels longer than those in the spikelets ...	*C. assimile*
Hairs almost of same length in the pedicel and in the spikelets ...	*C. huegelii*

C. assimile (Steud.) A. Camus; *Andropogon assimilis* Steud.; FBI 7: 180.

In the region east of the Aravalli. Misroli *Wadhwa* 7640.

C. huegelii (Hack.) Stapf; *Andropogon huegelii* Hack.; FBI 7: 180.

In the region east of the Aravalli. Misroli *Wadhwa* 7640.

BOTHRIOCHLOA O. Ktze.

Lower racemes longer than the rhachis ...	*B. pertusa*
Lower racemes shorter than the rhachis ...	*B. bladhii*

B. pertusa (L.) A. Camus; *Andropogon intermedius* R. Br. p.p. FBI 7: 176.

Widespread in Rajasthan. Jhalawar *Majumder* 10094A.

B. bladhii (Retz.) S. T. Blake; *Andropogon intermedius* var. *punctatus* Hook. f.; FBI 7: 176.

In the region east of the Aravalli. Jhalawar *Majumder* 10094; Dani Talao *Verma* 1775.

DICHANTHIUM Willemet

Spikelets narrow more or less lanceolate ...	*D. annulatum*
Spikelets obovate ...	*D. caricosum*

D. annulatum (Forssk.) Stapf; *Andropogon annulatus* Forssk.; FBI 7: 196.

Rather rare though widespread. Shahabad *Verma* 432; 654; Bundi *Verma* 1811; Ameth *Verma* 3408.

D. caricosus (L.) A. Camus; *D. aristatum* (Poir.) C. E. Hubb. *A. caricosum* L. et var. *mollicomus* (Kunth) Hack.; FBI 7: 196.

In the region east of the Aravalli. Jhalawar *Majumder* 10111; Pirawa *Wadhwa* 6835; 6833; Eklera *Wadhwa* 7606; *Verma* 7549; Bhowanimandi *Verma* 3501.

There is no doubt as pointed out by de Wet et Harlan (*Amer. J. Bot.* 53: 97. 1966) that morphological and genetical data indicate that *Bothriochloa, Capillipedium* and *Dichanthium* are section of one genus, that may be termed as *Dichanthium* being oldest. According to them *D. intermedium* (R. Br.) de Wet et Harlan, includes synonyms like *Bothriochloa grahamii* (Haines) Bor, *B. glabra* (Roxb.) A. Camus, *B. haenkei* (Presl) Ohwi, *B. intermedia* (R. Br.) A. Camus and *B. odorata* (Lisboa) A. Camus. They have also mentioned that *Bothriochloa caucasica* (Trin.) C. E. Hubb., is a apomict hybrid derivative between *B. intermedia* and *Capillipedium parviflorum.* However *D. intermedium* should be replaced by an earlier combination *D. bladhii* (Retz.) Clayton. Pending critical review of the Indian taxa as a whole to their genetic make up it is thought desirable for the time being to follow the conventional treatment to avoid confusion.

ANDROPOGON L.

A. pumilus Roxb.; FBI 7: 170.

In the region east of the Aravalli. Jhalawar *Majumder* 10082; 10068; Eklera *Verma* 7533; Jhalawar *Wadhwa* 3545.

CYMBOPOGON Spreng.

C. martinii (Roxb.) Wats.; *Andropogon schoenanthus* var. *martinii* Hk. f.; FBI 7: 204.

Widespread in Rajasthan. Chandrapura *Verma* 1812; Jhalawar *Majumder* 10070; 10206; Parshad *Verma* 128; Dug, Naolekha *Wadhwa* 6721; Eklera *Wadhwa* 5392.

SCHIZACHYRIUM Nees

S. brevifolium (Sw.) Nees ex Buse; *Andropogon brevifolius* Sw.; FBI 7: 165.

In southeast Rajasthan. Fls.: Aug.-Oct. Shahabad *Majumder* 10885B; 13149; 13255.

EREMOPOGON (Hack.) Stapf

E. foveolatus (Del.) Stapf; *Andropogon foveolatus* Del.; FBI 7: 168.

Widespread in Rajasthan. Jhalawar *Wadhwa* 5393; Kokanda Denwas *Wadhwa* 5414; Kota *Wadhwa* 1997; Shahabad *Majumder* 10839.

ELYONURUS Humb. et Bonpl. ex Willd.

E. royleanus Nees ex A. Rich.; FBI 7: 161.

Throughout Rajasthan. Shahabad *Majumder* 12220.

HETEROPOGON Pers.

H. contortus (L.) P. Beauv. ex R. & S.; FBI 7: 199.

Widespread in Rajasthan. Puraniya *Verma* 751; Kokanda *Wadhwa* 5412; Dug *Verma* 6773.

THEMEDA Forssk.

T. quadrivalvis (L.) O. Ktze.; *Anthistiria ciliata* L. f. FBI 7: 213.

In the region east of the Aravalli. Eklera *Majumder* 10028; Jhalawar *Majumder* 10093; *Wadhwa* 7558; 6744.

ISEILEMA Anderss.

Nodes at least the lower glabrous; tubercles on the spatheoles and spikelets absent ... *I. laxum*

All the nodes hairy; tubercles present on the spatheoles and on the involucral spikelets ... *I. prostratum*

I. laxum Hack.; FBI 7: 218.

Widespread in Rajasthan. Jhalawar *Majumder* 10103; Eklera *Majumder* 10019; *Verma* 7505; Shahabad *Verma* 701; 1682; Dug *Wadhwa* 6776; Manoharthana *Verma* 3441; Kapildhara Puraniya *Verma* 760; 759.

I. prostratum (L.) Anderss.; FBI 7: 218.

In the region east of the Aravalli. Kota *Wadhwa* 1975; Kapildhara, Puraniya *Verma* 759A.

ARTHRAXON P. Beauv.

1. Lower glume of the sessile spikelets rounded on the back; pedicelled spikelets developed at least in the upper part of the raceme; spikelets under 3.5 mm long; racemes silky hairy; stamens 2 ... *A. lancifolius*

   Lower glume of the sissele spikelet 2-keeled on the back, pectinate on the keels; spikelets 4 mm long or longer ... 2

2. Lower glume of the sessile spikelets with teeth-like projections on the keels only, otherwise nerves smooth ... *A. lanceolatus*

   Lower glume with teeth-like projections on the keels and lateral nerves with finer projections; stamens 3 ... *A. prionodis*

A. lancifolius (Trin.) Hochst.; Bor, Grasses 100.

In south (Chittor *Majumder* 10164) and southeast Rajasthan. Jhalawar, Misroli *Wadhwa* 7658.

A. lanceolatus (Roxb.) Hochst.; FBI 7: 143 pp.

In south (Banswara *Majumder* 10281) and southeast Rajasthan. Jhalawar *Majumder* 10110; 10078.

A. prionodis (Steud.) Dandy; *A. lanceolatus* Hochst. FBI 7: 143 pp.

In the region east of the Aravalli. Jhalawar *Verma* 3352; Bhowanimandi *Verma* 3503; Dug *Verma* 6764; Sarhod *Wadhwa* 7696.

ISCHAEMUM L.

1. Lower glume of the sessile spikelet flat on the back with a median furrow, margins serrated; spike single ... *I. laxum*

   Lower glume worty, transversely ridged or indurated; spikes more than one ... 2

2. Margins of the lower glume expanded below the middle, broadly winged on the upper part; spikelets under 5 mm long ... *I. indicum*
Margins of the lower glume of the sessile spikelets narrowly winged and inturned from base to apex ... 3
3. Pedicel of the pedicelled spikelet more than one-third the length of the sessile spikelet; lower glume of the sessile spikelet lanceolate or elliptic-lanceolate, dorsal surface pilose, flat or depressed; perennial with creeping root-stock ... *I. pilosum*
Pedicel of the pedicelled spikelet less than one-third of the length of the sessile spikelet ... 4
4. Spikelets 8-9 mm long, densely woolly ... *I. bombaiensis*
Spikelets 6 mm long or less; lower glume of sessile spikelet transversely rugose, smooth or pilose ... 5
5. Spikelets smooth; lower glume of sessile spikelet transversely rugose; leaf-blades not cordate at base ... *I. rugosum*
Spikelets woolly at length glabrescent; leaf-blades cordate at base 4. *I. molle*

I. laxum R. Br.; FBI 7: 136; *Sehima nervosum* (Rottl.) Stapf

Widespread in Rajasthan. Fls.: Sept.-Dec. Kishanganj *Verma* 735; Eklera *Verma* 7572; Bakani, Kalisind *Wadhwa* 7012.

I. pilosum (Klein ex Willd.) Wt.; FBI 7: 130.

In the region east of the Aravalli. Fls.: Sept.-Nov. Baran Shahabad Road *Majumder* 10805; 10833; Bijliya Bhadak *Wadhwa* 7585; Bhowanimandi *Verma* 3506.

I. rugosum Salisb.; FBI 7: 127.

In the south and southeast Rajasthan. Fls.: Sept.-Dec. Jhalawar *Majumder* 10096; 10091.

I. molle Hook. f.; FBI 7: 128.

In the region east of the Aravalli. Fls.- Sept.-Dec. Sitabari forest *Wadhwa* 9276; Jhalawar *Verma* 18328; *Majumder* 10091B.

I. bombaiensis Bor

Throughout Rajasthan, rather rare. Lotiajhir *Wadhwa* 5481; Jhalawar *Verma* 1832.

I. indicum (Houtt.) Merr. var. *indicum* sub. var. *villosum* (Nees) Bor; *I. ciliare* var. *villosum* Hack.; FBI 7: 134.

In the southeast Rajasthan. Fls.: Sept.-Dec. Jhalawar-Eklera Road *Majumder* 10029.

APLUDA L.

A. mutica L.; *A. mutica* var. *aristata* (L.) Pilger; FBI 7: 150.

In the region east of the Aravalli. Jhalawar: Bhowanimandi *Wadhwa* 7659; Ghatoli *Wadhwa* 7563.

MNESITHIA Kunth

M. laevis (Retz.) Kunth; *Rottboellia perforata* Roxb.; FBI 7: 158.

In south and souteat Rhsajasthan. Fls.: Sept.-Dec. Jhalawar *Wadhwa* 7510.

HEMARTHRIA Kunth

H. compressa (L.f.) R. Br.; *Rottboellia compressa* L. f.; FBI 7: 153.

In the region east of the Aravalli. Bundi: Mangli river bank *Verma* 1867; Pirawa, Rampuriya *Wadhwa* 6846; Eklera *Majumder* 10044; *Wadhwa* 3591; Kapildhara, Puraniya *Verma* 758.

OPHIUROS Gaertn. f.

O. oxaltatus (L.) O. Ktze.; *Ophiuros corymbosus* Gaertn.; FBI 7: 160.

In the south and southeast Rajasthan. Eklera: Manoharthana *Wadhwa* 3591; Shahabad *Verma* 454; *Majumder* 10455.

RHYTILIX Rafin.

R. granularis (L.) Skeels; *Hackelochloa granularis* (L.) Ktze.; *Manisuris granularis* L. f.; FBI 7: 159.

In the region east of the Aravalli. Fls.: Sept.-Oct. Lotiajhir. *Wadhwa* 5491.

CHIONACHNE R. Br.

C. koenigii (Spr.) Thw. *Polytoca barbata* (Roxb.) Stapf; FBI 7: 102.

In south and southeast Rajasthan. Fls.: Sept.-Dec. Jhalawar: Dug *Verma* 6765.

COIX L.

C. aquatica Roxb.; Bor, grasses 264.

Widespread in Rajasthan, by the sides of the nalas, streams and lakes. Jhalawar: Sarhod *Wadhwa* 7691 ; Jhalawar *Wadhwa* 7525 ; *Majumder* 10084 ; *Verma* 1780.

ZEA L.

Z. mays L. ; FBI 7 : 102.

A native of America. Maize is the chief crop of the Aravalli districts. It is sown early in June and July and is harvested by the end of October. It is grown predominently in the districts of Ajmer, Banswara, Chittorgarh, Dungerpur and Udaipur.

THE VEGETATION AND ITS ENDEMIC VALUE

The area under study is homoclimatic with adjoining Madhya Pradesh and Gujarat. The present tract is the remnant of once more widespread and luxurient deciduous forest characteristic of the hot monsoonal climate. For within the living memory there were no death of the wild animals in the area. The biotic interferences are solely responsible for the ecological disbalance and dying out of the fauna. The endemic value of such a wide tract as expected is very low. However the forests are composed of indigenous arboreous elements and as such a natural heritage. Some of the trees and shrubs are really going to be very scarce such as—*Dolichandrone falcata* var. *lawii*, *Eriolaena hookeriana*, *Melhania hamiltoniana*, *Gossypium arboreum*, *Anogeissus coronata*, *Colebrookia oppositifolia*, while others though not so scarce but being economical or forest forming need equal protection such as *Santalum album*, *Bombax ceiba*, *Terminalia arjuna*, *T. alata*, *T. bellirica*, *Diospyros* spp., *Acacia catechu*, *A. nilotica* ssp. *indica*, *Dalbergia latifolia*, *D. sissoo*, *D. lanceolaria*, *Ailanthus excelsa*, *Anogeissus latifolia*, *Gardenia turgida*, *G. resinifera*, *Adina cordifolia*, *Mitragyna parvifolia*, *Firmiana colorata*, *Casearia elliptica*, *Cassine glauca*, *Butea monosperma*, *Bauhinia vahlii*, *B. purpurea*, *Cassia fistula* etc.

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N.B. The style of keys and citations of this final part is uniform with the earlier published two parts